

ThermoCycler Programs

GEM

For use with Pfx Platinum DNA polymerase – Invitrogen

Steps	Temperature	Time
Denature	94.0°C	5 min
Repeat cycle 25-35 times		
Denature	94.0°C	30 sec
Anneal	56.0°C	30 sec
Extend	68.0°C	1 min/kb
Final Extension	68.0°C	10 min
	4.0°C	Hold

GEMQC

For use with Stratagene Quikchange® Site-Directed Mutagenesis Kit
PfuTurbo DNA Polymerase

Steps	Temperature	Time
Denature	95.0°C	5 min
Repeat cycle 12-18 times		
Denature	95.0°C	30 sec
Anneal	55.0°C	1 min
Extend	68.0°C	1 min/kb
Final Extension	68.0°C	10 min
	4.0°C	Hold

GEMTAQ

For use with Taq DNA Polymerase from Promega

Steps	Temperature	Time
Denature	94.0°C	5 min
Repeat cycle 25-35 times*		
Denature	94.0°C	1 min
Anneal	56.0°C	1 min
Extend	72.0°C	1 min/kb
Final Extension	72.0°C	10 min
	4.0°C	Hold

*For IVC quantification use 16-20 cycles

GEMHF

For use with Phusion™ Hot Start High Fidelity DNA Polymerase

Steps	Temperature	Time
Denature	94.0°C	30 sec
Repeat cycle 25-35 times		
Denature	94.0°C	10 sec
Anneal	45-72°C	30 sec
Extend	72.0°C	15-30 sec/kb
Final Extension	68.0°C	10 min
	4.0°C	Hold

GEMBI

For use with Qiagen Bisulfite Sequencing kit

Steps	Temperature	Time
Denaturation	99 °C	5 min
Incubation	60 °C	25 min
Denaturation	99 °C	5 min
Incubation	60 °C	85 min
Denaturation	99 °C	5 min
Incubation	60 °C	175 min
	20 °C	Hold

New GEMTaq (after 3/4/08)

For use with HotStarTaq DNAP from Qiagen

Steps	Temperature	Time
Denature	94.0 °C	5 min
Repeat cycle 25-35 times		
Denature	94.0 °C	30 sec
Anneal	50-60 °C	30 sec
Extend	68.0 °C	1 min/kb
Final Extension	68.0 °C	10 min
	4.0 °C	Hold